



Guterl Specialty Steel Site

Environmental Monitoring Report

2021 Sampling Results

**U.S. Army Corps Of Engineers
Buffalo District
September 2022**

BUILDING STRONG ®

Formerly Utilized Sites Remedial Action Program—Guterl Site

Site Description

The Guterl Specialty Steel Corporation Site (Guterl Site) is located in Lockport, Niagara County, New York, approximately 20 miles northeast of Buffalo, New York. The U.S. Army Corps of Engineers (USACE) is investigating the site under the Formerly Utilized Sites Remedial Action Program (FUSRAP). This program was established in 1974 to identify, investigate, and if necessary, clean up or control sites throughout the United States that were contaminated as a result of the Nation's early atomic weapons and energy programs.

Land use near the Guterl Site consists of private residences light industries, and a former railroad right-of-way. The Erie Canal is southeast of the site. The 70-acre Guterl Site (Figure 1) is comprised of two areas:

- The 61-acre Allegheny Technologies Incorporated (ATI) (formerly Allegheny Ludlum Corporation) property. ATI operates a specialty manufacturing facility in the southwest portion of this property. This property includes the 9-acre Class 2 New York State Department of Environmental Conservation Inactive Hazardous Waste Disposal Site (Site No. 932032) in the northwest corner of the site.
- The 9-acre excised area formerly owned by Guterl Specialty Steel. This area includes nine buildings located in the southeast corner of the site, some of which were used during Atomic Energy Commission (AEC) operations to roll uranium metal. These buildings are abandoned and a chain link security fence surrounds them.

Purpose

The purpose of groundwater monitoring at the Guterl Site is to determine the potential for movement of FUSRAP-related radiological contaminants associated with historical AEC activities. Between 1948 and 1956, the AEC New York Operations Office managed contracts there with Simonds Saw and Steel, a previous owner of the property, to roll uranium metal billets into rods.

USACE samples a subset of the on-site groundwater wells annually to 1) monitor conditions at the site, 2) develop baseline data for monitoring groundwater for use in assessing effectiveness of remedial alternatives once implemented, and 3) develop and evaluate remedial alternatives to address unacceptable risks. USACE posts annual environmental monitoring data reports for the Guterl Site under the "Environmental Monitoring" section of the project website (see footer for website).

Scope

USACE selects groundwater wells at the Guterl Site for sampling based on previously collected data and the potential for transport of FUSRAP-related constituents. Normally a subset of these wells (between 20 and 24) is sampled annually; 24 wells were sampled in 2021. Figure 1 shows the existing wells at the site and highlights the 24 shallow and deep groundwater wells sampled in 2021. A contracted laboratory analyzed the samples for dissolved and total uranium, the most mobile FUSRAP-related constituent at the Guterl Site.

USACE also samples groundwater seeps discharging from the northern wall of the Erie Canal and surface water in the Erie Canal to monitor groundwater discharges of FUSRAP-related constituents to the waterway. Figure 1 shows the locations of two groundwater seeps sampled as well as the location of a single surface water sample. Seep and surface water locations vary slightly from year to year depending on access and sampling logistics. The samples were analyzed for dissolved and total uranium at the same contract laboratory.

Results and Interpretation

Groundwater Results

Table 1 presents the unfiltered and filtered analytical results for isotopic and total uranium in groundwater samples collected at the site between 2007 and 2021. The 2021 groundwater sample results are consistent with historical (i.e., 2007 and 2009 to 2020) data, as shown in Table 1. Uranium in shallow groundwater migrates in the direction of groundwater flow, from the northwest to the southeast towards the Erie Canal (Figure 2). Uranium in deep groundwater is less extensive than the shallow groundwater plume and exhibits the same northwest to southeast trend (Figure 3).

Groundwater monitoring wells MW-26 and MW-605D continue to exhibit the highest total uranium concentrations in 2021: 320 µg/L (unfiltered) and 312 µg/L (unfiltered), respectively. These wells are near the center of the Guterl Site and sample results indicate the uranium migration pathway from northwest to southeast across the site.

Seep Results

USACE collected two seep samples from the northern wall of the Erie Canal immediately downgradient of the uranium plume in shallow and deep groundwater. Table 2 presents the unfiltered and filtered analytical results for total uranium for the 2021 seep samples. Historical data from 2011 to 2020 are presented as reference and indicate the 2021 data are consistent with historical seep samples taken along the northern wall of the Erie Canal. The results are comparable to the uranium concentrations in the deep groundwater plume (Figure 3).

Surface Water Results

Table 3 lists the unfiltered (total) and filtered (dissolved phase) analytical results for total uranium for the 2021 surface water sample collected in the Erie Canal. The 2021 results are similar to historical values from 2012 to 2020. These sampling results indicate that the Erie Canal water is not adversely affected by plume seepage and remained unchanged throughout this sampling period.

Conclusions

Uranium concentrations in groundwater at the Guterl Site remain consistent with historical results. The minor variations observed between years likely exemplify seasonal fluctuations

derived from variations in groundwater recharge through contaminated site soils. This fluctuation also influences the size of the groundwater plume via dispersive forces such as recharge and nearby pumping at the quarry. However, the plume maintains a consistent shape that indicates the external influences are minimal and preferential flow paths in the aquifer govern uranium transport. Groundwater under the site is currently not a utilized source of potable (i.e., drinking) water and is also not adversely impacting surface water in the Erie Canal. Therefore, there is no risk to human health or the environment from uranium in site groundwater.

The 2021 seep and surface water uranium concentrations are comparable to historical results. The potential uranium impacts to the Erie Canal via groundwater seeps have been evaluated, and USACE will continue to monitor the groundwater seeps and Erie Canal surface water. The low levels of uranium in the groundwater seeps do not pose an unacceptable risk to users of the canal. Uranium concentrations in surface water in the Erie Canal are indistinguishable from background (naturally occurring) uranium concentrations measured upstream of the site.

Next Steps

USACE will continue to annually sample groundwater, seeps, and surface water to monitor conditions and support the record of decision for the Guterl Site. The next round of groundwater, seeps, and surface water sampling will occur in the fall of 2022.

Table 1 - Groundwater Sample Results 2007–2021
Guterl Specialty Steel Corporation

Location ID	Sample Date	Total Uranium ($\mu\text{g/L}$)	Uranium-234 (pCi/L)	Uranium-235 (pCi/L)	Uranium-238 (pCi/L)
MW-01	8/2/2007		1.32	-0.005 U	1.27
	11/14/2007		1.03	0.046 U	0.72
	9/16/2009	3.2093	2.063	0.0263 U	1.24
	9/20/2010	3.28	1.98	0.126 U	1.29
	8/23/2011	4 J	1.86	0.02 U	1.22
	10/25/2012	3.44	1.11	0.1 J	1.05
	9/26/2013	3.43	1.28	0.136 J	1.04
	5/6/2014	3.85	1.24	0.071 J	1.23
	8/4/2015	3.86	1.4	0 U	1.63
MW-01 (Filtered)	8/2/2007		1.46	0.07 U	1.3
	11/14/2007		0.83	0.056 U	0.93
	9/16/2009	3.1001	1.695	0.2212	1.182
	9/20/2010	2.93	2.16	0.245	1.75
	8/23/2011	3.5 J	1.32	-0.008 U	1.24
	10/25/2012	3.29	1.15	-0.015 U	0.799
	9/26/2013	3.47	1.24 J	0.029 UJ	1.17 J
	5/6/2014	3.85	1.27	0.147 J	0.955
	8/4/2015	3.68	1.72	0.137	1.14
MW-02	8/7/2007		6.3	0.22	7.2
	11/14/2007		6	0.4	7.1
	9/15/2009	35.2633	12.43	1.022	15.48
	9/20/2010	21.4	7.31	0.298	7.7
	8/23/2011	41.3 J	12	0.62	12.9
	10/25/2012	23.8	7.4	0.472	7.97
	8/6/2015	9.93	3.74	0.168 J	3.41
MW-02 (Filtered)	8/7/2007		6.1	0.3	6.5
	11/14/2007		5.85	0.33	7.1
	9/15/2009	37.0504	12.5	0.7278	12.16
	9/20/2010	21.8	6.9	0.9	6.77
	8/23/2011	39.7 J	9.68	0.36	10.4
	10/25/2012	24	7.21	0.279	7.58
	8/6/2015	10.5	3.09	0.246 J	3.98
MW-03	8/9/2007		2.38	0.13 U	1.8
	11/14/2007		1.89	-0.01 U	1.56
	9/15/2009	2.7824	1.202	0.1773 U	0.9858
	9/20/2010	1.95	1.44	0.198 J	1.29
	8/22/2011	2.6	0.88	0.04 U	0.92
	8/5/2015	3.84	1.5	0.047 U	1.02
MW-03 (Filtered)	8/7/2007		2.2	0.09	2.31
	11/14/2007		1.68	0.068 U	1.62
	9/15/2009	2.7134	1.434	0.1444 U	1.635
	9/20/2010	1.86	2.02	0.473	1.38
	8/22/2011	2.5	1.06	0.012 U	0.86
	8/5/2015	3.93	1.54	0.055 J	1.68

MW-04	8/10/2007		17.8	0.72	16.2
	11/15/2007		17.3	0.66	15.7
	9/17/2009	30.5057	15.34	0.9199	13.39
	9/20/2010	39.9	13.6	1.04	13.7
	8/19/2011	48	14.9	0.87	14.4
	10/24/2012	39.6	15.5	0.748	13.9
	8/4/2015	38.8	12.9	0.528	12.7
MW-04 (Filtered)	8/8/2007		18.2	0.79	15.9
	11/15/2007		17.9	0.76	16.8
	9/17/2009	33.3592	13.25	0.5536	12.76
	9/20/2010	39.2	11.7	0.622	11
	8/19/2011	46	16.1	0.8	16.7
	10/24/2012	41.2	14	0.5	13
	8/5/2015	39.3	12.7	0.711	12.6
MW-05	8/10/2007		3.03	0.25	2.61
	11/14/2007		2.2	0.045 U	2.09
	9/17/2009	5.1646	2.079	0.18	1.564
	9/20/2010	5.95	3.62	0.546	2.64
	8/22/2011	6.1	2.36	0.098	2.06
	8/10/2015	6.07	2.43	0.136 J	2.18
MW-05 (Filtered)	8/9/2007		3.19	0.25	2.77
	11/14/2007		2.16	0.15	1.82
	9/17/2009	5.9077	2.591	0.1929	1.998
	9/20/2010	5.75	2.5	0.143	2.03
	8/22/2011	6.2	2.4	0.112	2.21
	8/10/2015	6.06	2.39	0.078 J	1.89
MW-06	8/6/2007		1.55	0.028 U	1.29
	11/14/2007		3.91	0.15	2.94
	9/15/2009	1.2015	0.8029	0.053 U	0.4737
	9/17/2010	5.07	1.92	0.231 J	1.5
	8/12/2011	3.6	1.77	0.034	1.16
	8/4/2015	3.77	1.86	0.047 J	1.26
MW-06 (Filtered)	8/2/2007		1.3	0.06 U	1.06
	11/14/2007		2.95	0.09	2.62
	9/15/2009	0.8195 U	0.3081 U	0.1035 U	0.3174
	9/17/2010	4.87	2.81	0.38 J	2.1
	8/12/2011	3.6	1.57	0.107	1.04
	8/4/2015	3.77	1.18	0.103 J	1.01
MW-07	9/15/2009	1.2711	0.2706 U	0.267 U	0.4873
	9/17/2010	75.8	13.2	1.09	13.6
	8/12/2011	33.4	11.8	0.67	12.1
	10/23/2012	37.4	12.9	0.62	12.3
	9/26/2013	9.07	3.67	0.079 J	2.9
	5/6/2014	2.84	0.716	0.078 J	0.684
	8/4/2015	33.4	10.8	0.195 J	10.2
	9/21/2016	34			
	9/19/2017	12.3			
MW-07 (Filtered)	9/25/2018	35.8			
	9/15/2009	1.2387	0.7767	0.1868 U	0.3306
	9/17/2010	33.9	11.2	0.693	10.9
	8/12/2011	32.4	10.5	0.54	10.6
	10/23/2012	36.6	12.4	0.612	12.3
	9/26/2013	9.95	3.49	0.096 J	3.74
	5/6/2014	2.75	1.06	-0.009 U	0.908
	8/4/2015	29.3	9.86	0.457	10.4
	9/21/2016	35.8			
	9/19/2017	10.9			
	9/25/2018	40.5			

MW-08	8/20/2007		0.51	0 U	0.26
	11/14/2007		0.41	0 U	0.26
	9/16/2009	0.966 U	0.7541	0.0376 U	0.3088 U
	9/20/2010	1 U	0.79	0.12 U	0.48
	8/8/2011	1.1 J	0.37 J	-0.006 UJ	0.24 J
	8/5/2015	1.09	0.682 J	0.038 U	0.409 J
MW-08 (Filtered)	8/20/2007		0.39	-0.005 U	0.18
	11/14/2007		0.23	0.045 U	0.084 U
	9/16/2009	0.809 U	0.6668	0.0373 U	0.1111 U
	9/20/2010	1 U	1.19	0.348 J	0.718
	8/8/2011	1.1 J	0.4	0.022 U	0.34
	8/5/2015	1.08	0.481	0.065 J	0.499
MW-09	8/7/2007		4.2	0.27	4.99
	11/14/2007		4.22	0.23	4.5
	9/16/2009	18.9323	6.416	0.4357	6.799
	9/20/2010	19.5	8.48	1.3	8.66
	8/8/2011	21.8 J	6.07	0.32	6.48
	10/25/2012	41	11.3	0.427	13.7
	9/26/2013	111	34.1	1.86	35.9
	5/6/2014	46	13.3	0.572	15.1
	8/5/2015	47	14.1	0.751	15.6
	9/22/2016	32.9			
	9/19/2017	51.1			
	9/26/2018	37.9			
MW-09 (Filtered)	8/7/2007		4.74	0.16	5.17
	11/14/2007		4.03	0.22	4.11
	9/16/2009	18.0175	6.857	0.677	8.375
	9/20/2010	20.8	7.44	0.617	6.85
	8/8/2011	21.1 J	6.26	0.28	6.7
	10/25/2012	41.1	12.5	0.745	13.8
	9/26/2013	117	33	1.35	36.4
	5/6/2014	48.7	13	1	15.2
	8/5/2015	47.5	13.9	0.592	15.5
	9/22/2016	32.5			
	9/19/2017	59.5			
	9/26/2018	42			
MW-10	9/15/2009	0.9652 U	0.5957	0.0394 U	0.4905
	9/17/2010	1.21	1.25	0.208 J	0.7
	8/12/2011	1.6	0.58	0.029	0.41
	8/6/2015	1.48	0.66	0.07 J	0.587
MW-10 (Filtered)	9/15/2009	1.0029	0.1977	0.0889 U	0.36
	9/17/2010	1.17	1.38	0.29 J	1.4
	8/12/2011	1.5	0.65	0.011 U	0.53
	8/6/2015	1.34	0.482	0.077 J	0.6
MW-11	8/20/2007		1.82	0.13	1.9
	11/14/2007		6.8	0.38	5.91
	9/15/2009	2.6142	1.361	0.27	1.27
	9/20/2010	20.9	4.5	0.359	4.8
	8/8/2011	17.7 J	4.13	0.26	4.56
	10/25/2012	32.1	10.1	0.521	10.6
	8/6/2015	15.6	4.95	0.214 J	4.89
MW-11 (Filtered)	8/20/2007		1.65	0.1	1.41
	11/14/2007		5.32	0.33	5.28
	9/15/2009	6.3919	2.216	0.1837 U	2.339
	9/20/2010	22.1	8.62	1.19	7.77
	8/8/2011	14.5 J	4.75	0.22	4.65
	10/25/2012	33	10.8	0.741	12
	8/6/2015	13.3	4.1	0.327 J	5.13
MW-12	9/15/2009	1.3102	0.6997	0.0682 U	0.4215
	9/20/2010	1.68	1.35	0.098	1.02
	8/22/2011	3.9	1.49	0.136	1.43
	8/6/2015	2.43	0.857	0.123 J	0.885

MW-12 (Filtered)	9/15/2009	0.7296 U	0.6141	0.0123 U	0.4818
	9/20/2010	1.91	0.99	0.261 J	0.782
	8/22/2011	3.8	1.06	0.14	1.36
	8/6/2015	2.38	0.877	0 U	0.877
MW-13D	8/6/2007		19.6	0.82	21
	11/16/2007		20.3	1	22.4
	9/23/2009	101.5033	30.47	1.829	32.4
	9/14/2010	72.6	27.2	0.546	29
	8/11/2011	79.8	23.9	1.13	24.6
	10/25/2012	109	35.2	1.86	35.5
	9/25/2013	80	26.1	1.45	26.2
	5/7/2014	103	32.9	1.09	33.5
	8/10/2015	88.8	29.4	1.66	29.3
	9/21/2016	87			
	9/20/2017	107			
	9/25/2018	65			
	9/25/2019	103			
	9/22/2020	58.1			
MW-13D (Filtered)	10/6/2021	130			
	8/6/2007		21.4	0.98	20.9
	11/16/2007		20.4	1.05	22.3
	9/23/2009	105.6652	34.34	1.91	35.59
	9/14/2010	69.1	19.6	0.328 J	20.9
	8/11/2011	80.2	22.6	1.13	23.6
	10/25/2012	107	35.2	1.47	36.1
	9/25/2013	80.5	22.8	1.52	23.9
	5/7/2014	98.5	25.6	1.46	27.2
	8/10/2015	85.5	24.6	1.47	30.7
	9/21/2016	84.6			
	9/20/2017	102			
	9/25/2018	68.3			
	9/25/2019	101			
MW-14	9/22/2020	56.5			
	10/6/2021	121			
MW-14 (Filtered)	8/1/2007		0.92	0.1	0.9
	11/12/2007		1.52	0.021 U	1.08
	9/23/2009	6.3873	2.473	0.2291	2.941
	9/14/2010	7.01	2.02	0.157 U	1.73
	8/16/2011	8	2.49	0.17	2.08
	8/10/2015	10.4	3.17	0.113 J	3.7
	9/23/2020	14.5			

MW-15	8/14/2007		0.17	0.06 U	0.11 U
	11/13/2007		4.13	0.34	4.58
	9/22/2009	0.8425 U	1.025	0.1404 U	0.3867
	9/14/2010	1 U	0.688 J	0.174 J	0.459
	8/16/2011	2	0.37	0.022 U	0.61
	8/6/2015	3.98	0.965	0.193 J	1.27
MW-15 (Filtered)	8/14/2007		0.12 U	-0.005 U	0.082 U
	11/13/2007		5.7	0.33	7.2
	9/22/2009	1.0888	0.3999	0.0872 U	0.6332
	9/14/2010	1.39	0.812	0.036 U	0.643
	8/16/2011	1.5	0.48	0.003 U	0.58
	8/6/2015	4.26	1.27	0.051 U	1.53
MW-16	8/1/2007		5.55	0.31	6.3
	11/12/2007		8.6	0.43	9.6
	9/22/2009	29.7993	11.43	0.7005	10.29
	9/14/2010	21.9	3.04	0.198	3.57
	8/19/2011	29.3	8.8	0.44	9.7
	10/22/2012	27.1	8.54	0.382	9.42
	9/25/2013	35.7	11.3	0.556	11.1
	5/6/2014	25.3	7.2	0.268	8
	8/6/2015	28.2	7.75	0.448 B	8.37
	9/21/2016	26.1			
	9/19/2017	25.6			
	9/25/2018	21.1 J			
	9/25/2019	31.8			
	9/22/2020	24.6			
	10/6/2021	47.9			
MW-16 (Filtered)	8/1/2007		5.59	0.39	6.4
	11/12/2007		9	0.33	9.7
	9/22/2009	32.0065	10.96	0.9052	11.57
	9/14/2010	26.7	7.03	0.586	8.18
	8/19/2011	27.7	8.9	0.45	10.2
	10/22/2012	28.1	9.19	0.318	9.86
	9/25/2013	36.4	10	0.995	11.6
	5/6/2014	26	7.95	0.589	8.02
	8/6/2015	28	9.61	0.692	9.45
	9/21/2016	26			
	9/19/2017	27.9			
	9/25/2018	22.2			
	9/25/2019	29			
	9/22/2020	24.8			
	10/6/2021	49.3			
MW-17	7/31/2007		0.66	0.071	0.64
	11/12/2007		0.61	0.016 U	0.57
	9/22/2009	6.2056	2.554	0.3186	2.426
	9/14/2010	7.7	2.65	0.3	2.48
	8/16/2011	8.5	2.27	0.18	1.82
	8/10/2015	6.68	2.25	0.184 J	2.42
	9/24/2019	11.3			
	9/21/2020	10.1			
	10/6/2021	13.2 J			

MW-17 (Filtered)	7/31/2007		0.78	0.1 U	0.93
	11/12/2007		0.48	0.049 U	0.54
	9/22/2009	6.8555	2.087	0.1355 U	2.057
	9/14/2010	7.16	2.43	0.257 J	2.31
	8/16/2011	8.3	2.39	0.161	2.3
	8/10/2015	6.91	2.16	0.159 J	2.75
	9/24/2019	12.6			
	9/21/2020	10.4			
	10/6/2021	13.6			
MW-18	8/15/2007		42	2.2	43.2
	11/15/2007		40.4	1.61	39.2
	9/21/2009	150.4332	51.08	5.113	51.43
	9/15/2010	126	35.3	0.373	45
	8/5/2011	123 J	38.8	1.72	39.6
	10/25/2012	146	48	2.56	49
	9/24/2013	155	45.4	2.43	50
	5/7/2014	102	27.9	1.42	29.1
	8/10/2015	127	43.9	1.86	45.4
	9/22/2016	117			
	9/20/2017	104			
	9/26/2018	99.9			
	9/25/2019	121			
	9/22/2020	87.8			
	10/7/2021	74.3			
MW-18 (Filtered)	8/15/2007		42.6	1.66	41.4
	11/15/2007		41.4	2.08	44.3
	9/21/2009	122.4392	50.51	3.071	49.79
	9/15/2010	125	37	0.973	40.9
	8/5/2011	125 J	37.7	1.79	36.6
	10/25/2012	149	47.3	2.87	46.8
	9/24/2013	150	46.1	1.91	47.4
	5/7/2014	117	35.7	2	35.9
	8/10/2015	134	42.7	1.89	44.2
	9/22/2016	121			
	9/20/2017	112			
	9/26/2018	102			
	9/25/2019	119			
	9/22/2020	94.7			
	10/7/2021	75.9			
MW-19	8/6/2007		2.22	0.1 U	2.18
	11/15/2007		2.34	0.12	2.31
	9/18/2009	11.9322	5.884	0.1489 U	5.038
	9/15/2010	19.9	6.33	0.241 U	6.01
	8/4/2011	16.4 J	4.52	0.27	4.77
	10/22/2012	18.9	6.3	0.27	6.36
	9/24/2013	18.6	5.39	0.301	5.89
	5/6/2014	25.8	7.79	0.311	7.64
	8/4/2015	17.4	5.79	0.361	5.43
	9/22/2016	21.2			
	9/20/2017	46.7			
	9/26/2018	17.9			
	9/25/2019	19.7			
	9/23/2020	22.3			
	10/6/2021	22.1			

MW-19 (Filtered)	8/6/2007		2.45	0.061 U	1.9
	11/15/2007		2.19	0.09 U	2.27
	9/18/2009	12.2907	5.09	0.2658 U	4.369
	9/15/2010	19.8	5.41	0.163 U	5.4
	8/4/2011	12.9 J	4.34	0.192	4.27
	10/22/2012	18.8	6.03	0.377	6.03
	9/24/2013	18.3	5.69	0.201	6.21
	5/6/2014	24.7	7.38	0.57	8.2
	8/4/2015	18.1	5.83	0.286	6.34
	9/22/2016	20.3			
	9/20/2017	20.9			
	9/26/2018	17.6			
	9/25/2019	19			
	9/23/2020	20			
	10/6/2021	19.7			
MW-20	8/1/2007		3.36	0.22	3.67
	11/13/2007		3.84	0.17	3.86
	9/21/2009	13.1332	4.837	0.2399	4.637
	9/15/2010	12.2	4.36	0.373	3.99
	8/18/2011	13.5	4.5	0.23	4.27
	10/23/2012	9.57	3.57	0.222	2.99
	9/25/2013	14.4	4.63	0.265	5.14
	5/7/2014	17.1	4.86	0.242	5.09
	8/4/2015	13	4.74	0.204	4.39
	8/1/2007		3.64	0.14	3.78
MW-20 (Filtered)	11/13/2007		3.59	0.19	3.5
	9/21/2009	12.1524	5.04	0.205 U	4.822
	9/15/2010	13.7	4.08	0.16	3.96
	8/18/2011	13.3	3.89	0.24	3.82
	10/23/2012	9.98	3.13	0.176	3.67
	9/25/2013	14.7	4.51	0.312	4.51
	5/7/2014	16.9	5.52	0.361	5.78
	8/4/2015	12.4	4.08	0.198	3.86
	8/14/2007		1.91	0.07 U	1.65
	11/13/2007		2	0.02 U	2.34
MW-21	9/22/2009	2.5222	1.451	0.0804 U	1.053
	9/15/2010	4.46	1.73	0.694	1.51
	8/18/2011	3.1	0.73	0.058	0.79
	10/25/2012	5.4	1.8	0.092	1.93
	9/25/2013	1.91	0.497 J	0.037 UJ	0.42 J
	5/6/2014	3.13	0.926	0.104 J	0.861
	8/10/2015	2.42	0.897	0.053 U	0.638
	8/14/2007		1.69	0.046 U	1.32
	11/13/2007		1.97	0.12	1.75
	9/22/2009	3.5185	1.199	0.256	1.215
MW-21 (Filtered)	9/15/2010	3.57	2.02	0.269	1.49
	8/18/2011	3.2	1.03	0.037 U	0.93
	10/25/2012	5.2	1.65	0.139	1.91
	9/25/2013	2.11	1.04	-0.016 U	0.572
	5/6/2014	2.51	0.695	0.106 J	0.724
	8/10/2015	2.49	1.16	0.07 J	0.79

MW-22	8/8/2007		23.3	1.24	22.7
	11/15/2007		4.85	0.26	4.98
	9/16/2009	76.315	31.66	2.433 U	29.23
	9/17/2010	9.09	3.19	0.229	2.47
	8/5/2011	73.6 J	24.3	1.03	24.8
	10/23/2012	12.9	4.31	0.294	3.99
	8/4/2015	83.2	25.2	1.11	26.1
MW-22 (Filtered)	8/8/2007		21.5	1	21.8
	11/15/2007		4.49	0.19	4.1
	9/16/2009	81.9892	28.37	2.037	21.83
	9/17/2010	8.72	2.69	0.218 J	2.82
	8/5/2011	65.1 J	21.6	1.05	21.2
	10/23/2012	12.3	4.38	0.251	4.45
	8/4/2015	73.2	24.5	1.37	24.7
MW-23	8/10/2007		2.06	0.044 U	1.97
	11/15/2007		3.18	0.09 U	3.5
	9/17/2009	6.911	3.256	0.2119 U	2.407
	9/20/2010	7.29	3.89	0.316 J	4.81
	8/4/2011	6.7 J	1.79	0.114	1.73
	10/24/2012	8.72	2.88	0.108	3.07
	9/26/2013	5.58	1.49 J	0.028 UJ	1.22 J
	5/6/2014	5.55	1.99	0.066 U	2.15
	8/5/2015	7.38	2.72	0.158 J	2.35
MW-23 (Filtered)	8/10/2007		2.71	0.16	2.34
	11/15/2007		3.79	0.076 U	3.36
	9/17/2009	5.8493	2.706	0.4117	3.304
	9/20/2010	8.51	2.63	0.198 J	2.63
	8/4/2011	6.3 J	1.74	0.136	1.64
	10/24/2012	8.46	2.46	0.162	2.64
	9/26/2013	5.1	1.51	0.116 J	1.68
	5/6/2014	5.18	1.65	0.228	1.65
	8/5/2015	6.12	2.07	0.094 J	2.15
MW-24	8/8/2007		0.28	0.025 U	0.26
	11/15/2007		2.18	0.13	1.83
	9/17/2009	2.7548	9.534	5.997	4.278
	9/21/2010	24.6	8.75	0.895	10.2
	8/4/2011	39.8 J	13.1	0.43	12.6
	10/24/2012	8.02	2.78	0.107	2.75
	8/5/2015	9.65	3.47	0.112 J	3.35
	9/22/2016	5.29			
	9/20/2017	5.42			
	9/26/2018	6.37			
	9/25/2019	16.6			
	9/21/2020	5.63			
MW-24 (Filtered)	10/7/2021	7.52			
	8/8/2007		0.37	0 U	0.26
	11/15/2007		3.45	0.16	3.37
	9/17/2009	6.9186	3.755	0.1821 U	3.73
	9/21/2010	29.4	10.2	0.793	10.8
	8/4/2011	42.7 J	12.5	0.51	11.6
	10/24/2012	11.9	4.12	0.178	4.39
	8/5/2015	12.5	4.24	0.357	4.56
	9/22/2016	6.25			
	9/20/2017	5.84			
	9/26/2018	6.28			
	9/25/2019	15.7			

MW-25	9/17/2009	150.5146	65.74	5.175	69.72
	9/21/2010	198	52.1	2.88	55
	8/12/2011	175	55.7 J	3.22 J	56.4 J
	10/24/2012	166	68.8	3.21	63.4
	9/25/2013	154	51.9	2.82	49.9
	5/7/2014	166	53	2.79	53.4
	8/5/2015	108	42	2.72	37.2
	9/21/2016	133			
	9/20/2017	105			
	9/26/2018	140			
	9/24/2019	115			
	9/22/2020	162			
	10/6/2021	166			
MW-25 (Filtered)	9/17/2009	170.1841	64.52	3.646	62.23
	9/21/2010	211	53.5	3.97	55.9
	8/12/2011	171	58.5 J	3.28 J	60.5 J
	10/24/2012	162	53	2.25	60.9
	9/25/2013	160	66.4	4.61	60.3
	5/7/2014	170	50.3	2.63	52.3
	8/5/2015	111	44.9	2.41	45.2
	9/21/2016	144			
	9/20/2017	136			
	9/26/2018	160			
	9/24/2019	137			
	9/22/2020	154			
	10/6/2021	166			
MW-26	8/10/2007		65.8	2.65	65.6
	11/16/2007		80	5.3	77.9
	9/17/2009	148.6248	61.87	4.042	62.03
	9/21/2010	162	46.6	2.08	49.3
	8/10/2011	107	34.7	1.97	35
	2/1/2012	145 J	39.7 J	1.62	38.3 J
	5/4/2012	145	52.7	2.36	54.4
	8/6/2012	155	49	2.48	47.6
	10/24/2012	243	77.3	3.86	76.9
	9/25/2013	4.95	10.3	0.15 J	2.2
	5/7/2014	219	70.4	3.94	72.7
	8/4/2015	255	93.2	6.29	93.8
	9/21/2016	209			
MW-26 (Filtered)	9/20/2017	259			
	9/26/2018	279			
	9/25/2019	231			
	9/22/2020	220			
	10/6/2021	320			
	8/9/2007		60	2.79	58.7
	11/16/2007		82	4.17	78
	9/17/2009	144.1192	66.44	2.941	65.25
	9/21/2010	160	43.7	2.22	44.3
	8/10/2011	94.6	32.1	1.62	32.7
	2/1/2012	152 J	48.4 J	2.1	48.4 J
	5/4/2012	139	54.5	2.62	55.7
	8/6/2012	147	46.6	1.87	46.3
	10/24/2012	260	69.8	3.66	70.5
	9/25/2013	4.18	8.82	0.363	2.09
	5/7/2014	223	62.8	2.93	63
	8/4/2015	248	76.8	3.54	82.1
	9/21/2016	209			
	9/20/2017	263			
	9/26/2018	245			
	9/25/2019	238			
	9/22/2020	210			
	10/6/2021	296			

MW-600D	8/17/2007		1.17	0.08 U	0.69
	11/13/2007		0.66	0 U	0.66
	9/22/2009	2.3978	0.9078	0.1712 U	0.7109
	9/15/2010	2.25	1.13	0.548	0.817
	8/22/2011	2.4	0.92	0.032 U	0.78
	10/22/2012	1.41	0.715	0.04	0.616
	9/24/2013	2.12	0.946	0.057 J	0.588
	5/6/2014	2.26	1.17	0.05 U	0.714
	8/10/2015	2.11	0.756	-0.012 U	0.74
	9/21/2016	1.92			
	9/19/2017	1.39			
	9/26/2018	1.23			
	9/24/2019	2.01			
	9/21/2020	1.41			
	10/6/2021	1.66			
MW-600D (Filtered)	8/17/2007		3.78	0.17	3.3
	11/13/2007		0.86	0.043 U	0.86
	9/22/2009	1.9212	1.284	0.0349 U	0.5425
	9/15/2010	2.56	1.55	0.103 U	0.801
	8/22/2011	2.5	1.28	0.05 U	0.93
	10/22/2012	1.54	0.761	0.006 U	0.635
	9/24/2013	1.82	0.693	0.028 J	0.537
	5/6/2014	2.08	1.04	0.193 J	0.79
	8/10/2015	2.1	0.88	-0.015 U	0.901
	9/21/2016	1.86			
	9/19/2017	1.47			
	9/26/2018	1.44			
	9/24/2019	1.89			
	9/21/2020	1.38			
	10/6/2021	1.79			
MW-600S	9/22/2009	2.6132	1.365	0 U	1.398
	8/10/2015	2.34	1.31	0.022 U	0.725
MW-600S (Filtered)	9/22/2009	1.4945	0.9127	0.0751 U	0.7271
	8/10/2015	2.27	1.36	0.046 U	0.683
MW-601D	8/13/2007		5.83	0.4	5.23
	11/13/2007		7.1	0.45	7
	9/21/2009	2.1652	0.9164	0.1732 U	0.8404
	9/15/2010	7.81	5.52	0.486	3.1
	8/18/2011	9.6	2.54	0.104	2.66
	10/23/2012	7.3	2.66	0.077	2.36
	8/6/2015	4.09	1.53	0.154	1.27
MW-601D (Filtered)	8/15/2007		6.3	0.24	6.5
	11/13/2007		8	0.48	8.4
	9/21/2009	3.4267	1.533	0.1214 U	1.173
	9/15/2010	9.78	3.94	0.677	2.79
	8/18/2011	10.6	2.56	0.13	2.61
	10/23/2012	8.17	2.82	0.244	2.83
	8/6/2015	4.03	1.12	0.137	1.34

MW-602D	8/15/2007		36	1.77	37.5
	11/15/2007		25.6	1.39	26
	9/21/2009	150.2315	53.65	3.489	47.36
	9/15/2010	109	37.3	0.828	37.3
	8/11/2011	113	36.5	1.84	36
	10/23/2012	110	37.2	1.95	35.7
	9/25/2013	162	47.4	3.11	49.5
	5/6/2014	115	37.9	2.86	39.1
	8/5/2015	3.48	4.56	0.168 J	1.64
	9/21/2016	106			
	9/19/2017	86.2			
	9/25/2018	92.8			
	9/24/2019	94.2			
	9/21/2020	137			
	10/7/2021	108			
MW-602D (Filtered)	8/15/2007		39.1	2.15	39
	11/15/2007		27.6	1.77	29.8
	9/21/2009	133.0805	47.65	3.847	46.97
	9/15/2010	117	34.3	0.849	37.7
	8/11/2011	112	36.9	2.08	36.8
	10/23/2012	110	36.3	1.7	36.5
	9/25/2013	153	43.8	2.76	46.4
	5/6/2014	120	33.7	2.18	35.2
	8/5/2015	3.41	4.09	0 U	1.09
	9/21/2016	103			
	9/19/2017	88.7			
	9/25/2018	90.7			
	9/24/2019	94.1			
	9/21/2020	145			
	10/7/2021	110			
MW-603D	8/14/2007		4.06	0.2	3.84
	11/14/2007		5.06	0.1	4.28
	9/17/2009	4.8397	2.647	0.4919	2.117
	9/15/2010	4.86	2.89	0.199	2.11
	8/5/2011	11.1 J	2.86	0.107	2.76
	10/23/2012	6.58	2.51	0.115	2.23
	9/26/2013	7.68	2.25	0.152 J	2.37
	5/6/2014	8.08	2.23	0.237 J	2.37
	8/4/2015	7.55	2.17	0.117 J	2.29
	9/21/2016	5.11			
	9/19/2017	5.77			
	9/25/2018	6.44			
	9/24/2019	5.79			
	9/21/2020	5.75			
	10/7/2021	7.52			
MW-603D (Filtered)	8/17/2007		1.15	0.02 U	0.86
	11/14/2007		3.92	0.066 U	3.42
	9/17/2009	4.8819	2.472	0.2904	2.334
	9/15/2010	6.4	2.79	0.261	2.74
	8/5/2011	8.2 J	3.01	0.196	2.97
	10/23/2012	6.71	2.64	0.09	2.15
	9/26/2013	7.44	2.56	0.121 J	2.38
	5/6/2014	7.95	3	0.045 U	2.79
	8/4/2015	7.32	2.11	0.27	1.93
	9/21/2016	5.07			
	9/19/2017	5.55			
	9/25/2018	4			
	9/24/2019	5.63			
	9/21/2020	5.85			
	10/7/2021	7.53			

MW-604D	8/15/2007		23.5	0.96	23.7
	11/15/2007		39	1.92	38.2
	9/18/2009	117.0761	39.28	3.097	39.25
	9/15/2010	140	44	0.778	41.2
	8/10/2011	103	37.1	1.79	37
	2/2/2012	76.7 J	23.1	1.05	21.9
	5/4/2012	86.5	29.2	1.28	28.8
	8/6/2012	108	35.1	1.5	35.2
	10/23/2012	112	36.1	1.65	35.4
	9/24/2013	97.2	28.4	1.27	30.6
	5/7/2014	63.6	20.4	0.699	20.5
	8/4/2015	123	34.7	1.88	42.4
	9/21/2016	101			
	9/20/2017	90.2			
	9/25/2018	109			
	9/25/2019	126			
	9/23/2020	128			
	10/6/2021	126			
MW-604D (Filtered)	8/13/2007		22.8	1.55	24.7
	11/15/2007		43.2	1.81	42.3
	9/18/2009	104.2826	43.47	3.058	43.4
	9/15/2010	121	36.2	0.617	37.2
	8/10/2011	101	31.4	1.52	30.4
	2/2/2012	76.4 J	22	1.28	23.1
	5/4/2012	76.4	31	1.52	29.9
	8/6/2012	105	34.5	1.57	33.5
	10/23/2012	111	32.2	1.71	32.6
	9/24/2013	97.9	31.3	1.55	29.9
	5/7/2014	67.9	19.9	0.519	19.6
	8/4/2015	111	35.9	2.37	40.9
	9/21/2016	102 J			
	9/20/2017	102			
	9/25/2018	101			
	9/25/2019	123			
	9/23/2020	131			
	10/6/2021	120			
MW-605D	8/16/2007		67	4.9	63
	11/16/2007		66.9	3.23	68.2
	9/18/2009	273.9006	100.6	5.449	100.7
	9/21/2010	248	74.1	3.09	74.8
	8/10/2011	214	67.5	3.43	65.8
	2/1/2012	299 J	87.3	3.59	91
	5/5/2012	265	86.2	4.09	87.8
	8/6/2012	259	85.8	3.75	82.6
	10/24/2012	270	79.7	3.59	79.1
	9/25/2013	247	88.7	4.5	84.3
	5/6/2014	292	87.4	4.67	83.7
	8/5/2015	273	92.2	5.17	95.2
	9/21/2016	273			
	9/20/2017	268			
	9/25/2018	275			
	9/24/2019	274			
	9/21/2020	153			
	10/7/2021	312			

MW-605D (Filtered)	8/13/2007		68	3.6	64
	11/16/2007		70	3.4	64.2
	9/18/2009	238.1092	97.3	12.12	88.77
	9/21/2010	254	81.8	8.28	84
	8/10/2011	209	68.6 J	3.38 J	67.1 J
	2/1/2012	302 J	92.9	3.99	91.2
	5/5/2012	256	90.2	4.37	89.6
	8/6/2012	251	78.7	3.67	77.5
	10/24/2012	266	85.2	4.75	84
	9/25/2013	255	74.6	4.21	74.5
	5/6/2014	267	78.6	5.23	80.4
	8/5/2015	272	94.7	4.68	94
	9/21/2016	271			
	9/20/2017	248			
	9/25/2018	254			
	9/24/2019	255			
	9/21/2020	266			
	10/7/2021	287			
MW-606D	9/23/2009	7.244	2.861	0.2679	3.029
	9/14/2010	6.91	1.76	0.18 U	1.92
	8/16/2011	7.5	2.6 J	0.19 J	2.91 J
MW-606D (Filtered)	9/23/2009	5.6676	2.615	0.2134	3.102
	9/14/2010	6.09	1.58	0.118 U	1.69
	8/16/2011	7.4	2.88 J	0.068 J	2.37 J
MW-606DR	11/16/2007		2.66	0.16	2.9
	9/23/2009	9.2874	3.922	0.7947 U	3.656
	9/14/2010	12.8	5.77	0.824	4.56
	8/15/2011	12.8	3.37	0.23	3.73
	8/10/2015	6.2	2.38	0.22 J	2.02
	9/24/2019	16.2			
MW-606DR (Filtered)	10/6/2021	19.8			
	11/16/2007		2.51	0.2	2.4
	9/23/2009	14.9811	5.669	0.4328	5.445
	9/14/2010	14.7	4.95	0.396	4.76
	8/15/2011	12.4	4.2 J	0.17 J	4.54 J
	8/10/2015	7.61	2.45	0.067 J	2.61
	9/24/2019	15.4			
MW-607D	10/6/2021	18.4			
	8/15/2007		0.033 U	-0.008 U	-0.01 U
	11/13/2007		0.023 U	-0.005 U	0.064
	9/23/2009	14.9093	5.501	0.2694	4.918
	9/14/2010	10	3.36	0.178 U	3.71
	8/19/2011	19.5	5.35	0.24	4.99
	10/22/2012	13.9	4.86	0.133	5.05
	9/25/2013	13.4	4.29	0.263	4.4
	5/6/2014	15.8	5.01	0.205	4.25
	8/6/2015	11.2	3.19	0.201 J	4.45
	9/21/2016	6.35			
	9/19/2017	12.2			
	9/25/2018	8.75			
	9/24/2019	11.3			
	9/22/2020	6.05			
	10/6/2021	13			

MW-607D (Filtered)	8/15/2007		0.064 U	0.019 U	0.027 U
	11/13/2007		0.15	-0.009 U	0.009 U
	9/23/2009	17.7043	6.065	0.4562	6.521
	9/14/2010	10.9	4.95	0 U	3.01
	8/19/2011	12.3	3.88	0.119	4.04
	10/22/2012	12.2	3.62	0.316	4.74
	9/25/2013	13	3.63	0.313	3.61
	5/6/2014	14.7	4.51	0.217	4.77
	8/6/2015	12.7	3.98	0.215 J	4.45
	9/21/2016	5.97			
	9/19/2017	14.6			
	9/25/2018	8.72			
	9/24/2019	11			
	9/22/2020	6.83			
	10/6/2021	12.6			
MW-701DD	8/19/2011	1.4	0.89	0.041	0.39
	8/4/2015	0.633	0.158 J	-0.009 U	0.233
	9/22/2016	0.946 J			
	9/19/2017	2.05			
	9/26/2018	1.42			
	9/25/2019	0.707			
	9/22/2020	0.363 J			
	10/7/2021	0.334 J			
MW-701DD (Filtered)	8/19/2011	1.5	0.77	0.036	0.46
	8/4/2015	1.68	0.228 J	0.066 J	0.228
	9/22/2016	1.3 J			
	9/19/2017	1.78			
	9/26/2018	0.895			
	9/25/2019	0.694			
	9/22/2020	0.376 J			
	10/7/2021	0.335 J			
MW-702DD	8/11/2011	4.5	6.65	0.103	1.84
	8/5/2015	144	52.2	2.74	51.8
	9/21/2016	2.7			
	9/19/2017	2.17			
	9/25/2018	0.97			
	9/24/2019	1.86			
	9/21/2020	1.46 J			
	10/7/2021	3.67			
MW-702DD (Filtered)	8/11/2011	5.8	4.94	0.123	1.47
	8/5/2015	132	40	1.52	39
	9/21/2016	2.52			
	9/19/2017	1.22			
	9/25/2018	1.28			
	9/24/2019	1.46			
	9/21/2020	2.15			
	10/7/2021	3.56			
MW-703DD	8/19/2011	0.28	0.097	0.015 U	0.07
	8/6/2015	0.248 J	0.148 J	0.078 J	0.159 J
MW-703DD (Filtered)	8/19/2011	1 U	0.023 U	0 U	0.028 U
	8/6/2015	0.254 J	0.132 J	0.081 J	0.026 U
MW-704DD	8/10/2011	23.5	9.35	0.38	7.31
	2/2/2012	81.3 J	29.8	1.2	23.8
	5/5/2012	67	25.3	0.99	20.4
	8/6/2012	102	32.7	0.96	26.1
	10/22/2012	72.4	26	0.95	21.5
	8/5/2015	27.4	11.2	0.408	8.73
	9/21/2016	37.3			
	9/20/2017	20.9			
	9/25/2018	13.2			
	9/24/2019	11.8			
	9/21/2020	10.4			
	10/7/2021	19.7			

MW-704DD (Filtered)	8/10/2011	26.3	10.8	0.46	8.36
	2/2/2012	80.2 J	26.3	1.15	22.6
	5/5/2012	65.8	27.8	1.15	21.1
	8/6/2012	68.1	27.6	0.81	22.3
	10/22/2012	73.4	27.9	1.2	22.6
	8/5/2015	28.8	12.7	0.659	10.2
	9/21/2016	37.3			
	9/20/2017	24.2			
	9/25/2018	16.8			
	9/24/2019	27.8			
	9/21/2020	14.9			
	10/7/2021	21.4			
MW-705D	8/9/2011	0.89 J	0.212	0.018 U	0.185
	8/6/2015	1.6	1.61	0.038 U	0.494
MW-705D (Filtered)	8/9/2011	2.8 J	0.5	0.022 U	0.47
	8/6/2015	1.17	1.46	0.079 J	0.284
MW-705DD	8/9/2011	1.7	0.51	0.029	0.291
	8/6/2015	0.918	0.243	-0.009 BU	0.327
MW-705DD (Filtered)	8/9/2011	0.37	0.253	0 U	0.189
	8/6/2015	0.889	0.458	0.019 BU	0.27
MW-706DD	8/15/2011	1.8	0.98	0.029 U	0.48
	8/4/2015	1.05	0.758	0.088	0.365
MW-706DD (Filtered)	8/15/2011	1.7	0.95	0.012 U	0.42
	8/4/2015	1.2	0.782	0.182	0.232
MW-707DD	8/18/2011	34.5			
	2/1/2012	13.6 J	7.76 J	0.14	5.14
	5/4/2012	10.8	12.8	0.28	3.54
	8/7/2012	11.2	14.8	0.108	3.55
	10/23/2012	9.4	14.7	0.24	3.32
	8/4/2015	7.01	7.01	0.161 J	1.85
MW-707DD (Filtered)	8/18/2011	33.9			
	2/1/2012	14.1 J	14.5 J	0.23	4.32
	5/4/2012	10.6	12.3	0.18	3.51
	8/7/2012	8.3	9	0.129	2.73
	10/23/2012	8.4	12.2	0.128	2.49
	8/4/2015	1.39	6.66	0.054 J	1.68
MW-708DD	8/11/2011	22.4	7.18	0.31	7.03
	1/31/2012	24.7 J	7.1	0.29	7.2
	5/5/2012	18	6.97	0.2	6.72
	8/4/2012	20.2	7.04	0.4	7.12
	10/22/2012	20	6.59	0.29	5.72
	9/25/2013	23.2	7.22	0.259	7.02
	5/7/2014	15.2	4.74	0.14 J	4.6
	8/6/2015	20.4	6.37	0.409 B	7.19
MW-708DD (Filtered)	8/11/2011	23	7.19	0.3	6.9
	1/31/2012	22.3 J	7.99	0.49	7.76
	5/5/2012	18.3	7.37	0.26	7.35
	8/4/2012	19.3	7.26	0.27	6.68
	10/22/2012	20.1	7.02	0.35	6.41
	9/25/2013	20.7	7.64	0.412	7.17
	5/7/2014	16.3	4.87 J	0.269 J	4.71 J
	8/6/2015	20.1	6.96	0.38 B	7.24

MW-709DD	8/10/2011	52.8	16.8	0.71	16
	2/2/2012	88.3 J	25.5	1.48	26.3
	5/4/2012	80	27.7	1.05	28.7
	8/7/2012	82.7	28.4	1.83	28.6
	10/23/2012	85.9	27.6	1.41	27.8
	9/24/2013	33.9	13.1	0.378	12.3
	5/7/2014	74.8	23.6	1.32	24.4
	8/4/2015	72.7	22.9	0.514	23.8
	9/21/2016	84.7			
	9/20/2017	72.5			
	9/25/2018	73.6			
	9/25/2019	77.5			
	9/23/2020	91			
	10/6/2021	91			
MW-709DD (Filtered)	8/10/2011	55.4	18.5	0.7	17.4
	2/2/2012	88.5 J	27.5	1.01	25.5
	5/4/2012	80.4	27.2	1.23	25.9
	8/7/2012	84.3	28.7	1.66	29.4
	10/23/2012	83.8	28.2	1.26	27.1
	9/24/2013	68.5	21	1.15	23.7
	5/7/2014	81.2	25.1	1.18	26.5
	8/4/2015	75.2	27.5	1.2	23.3
	9/21/2016	82.8			
	9/20/2017	69			
	9/25/2018	79.4			
	9/25/2019	87.7			
	9/23/2020	93.1			
	10/6/2021	93			
MW-710D	8/15/2011	67.5	19.1 J	1.02	19.9
	1/30/2012	59.1 J	16.6	0.81	16.8
	5/4/2012	52.5	18.3	0.99	17.6
	8/7/2012	53.8	18.8	1.12	18.2
	10/22/2012	66	19.9	1.13	19.7
	9/26/2013	60.3	17.9	1.26	16.9
	5/6/2014	44.8	14	0.88	11.7
	8/6/2015	64.2	21.9	1.08	21.3
	9/21/2016	60.9			
	9/20/2017	56.9			
	9/25/2018	58.5			
	9/24/2019	68.6			
	9/22/2020	63.6			
	10/6/2021	90.4			
MW-710D (Filtered)	8/15/2011	66.1	24 J	1.2	23.8
	1/30/2012	57.8 J	17.3	0.9	17.5
	5/4/2012	49.5	18.7	0.91	19.4
	8/7/2012	52.3	19.9	1.08	20
	10/22/2012	66.8	20.3	1.07	20.1
	9/26/2013	59.1	18.6	1.2	20.9
	5/6/2014	44.5	12.5	0.693	13
	8/6/2015	64	22	1.1	21.1
	9/21/2016	58.8			
	9/20/2017	58.7			
	9/25/2018	57.5			
	9/24/2019	46.3			
	9/22/2020	63.4			
	10/6/2021	69.7			

MW-710DD	8/18/2011	60.8	18.6	1.02	19.1
	1/30/2012	71.4 J	19.6	0.93	21.3
	5/4/2012	59.1	21.7	0.96	22.1
	8/7/2012	29.6	8.79	0.59	9.6
	10/22/2012	28.6	8.85	0.36	8.82
	8/6/2015	52.3	18.2	1.26	18
	9/21/2016	60			
	9/20/2017	63.7			
	9/25/2018	63.7			
	9/24/2019	72			
	9/22/2020	68.6			
	10/6/2021	1.4			
MW-710DD (Filtered)	8/18/2011	67	21	1.38	21.3
	1/30/2012	71.9 J	20	1.17	20.4
	5/4/2012	56.6	19	1	19.1
	8/7/2012	28.9	9.28	0.43	9.5
	10/22/2012	28.3	9.34	0.47	9.06
	8/6/2015	46.5	15.2	0.818	14.1
	9/21/2016	70.2			
	9/20/2017	60.9			
	9/25/2018	64.1			
	9/24/2019	72.1			
	9/22/2020	70.6			
	10/6/2021	0.996			
MW-711D	8/9/2011	9	2.78	0.092	2.68
	10/23/2012	4.02	1.54	0.125	1.36
	9/26/2013	4.88	1.3	0.033 U	1.49
	5/7/2014	4.95	1.38	0.181 J	1.27
	8/4/2015	5.24	2.16	0.068 J	1.6
	9/21/2016	2.44			
	9/19/2017	3.04			
	9/25/2018	1.73			
	9/24/2019	2.39			
	9/22/2020	2.81			
	10/7/2021	3.09			
	8/9/2011	7.4	2.7	0.16	2.3
	10/23/2012	4.09	0.984	0.079	1.05
MW-711D (Filtered)	9/26/2013	4.88	1.79	0.073 J	1.46
	5/7/2014	5.46	1.82	0.057 U	2.04
	8/4/2015	5.42	2.24	0.096	2.26
	9/21/2016	2.94			
	9/19/2017	3.58			
	9/25/2018	1.72			
	9/24/2019	2.43			
	9/22/2020	2.05			
	10/7/2021	3.7			
MW-711DD	8/15/2011	1.7 J	0.8 J	-0.007 UJ	0.71 J
	10/23/2012	1.49	1.02	0.039	1.03
	9/26/2013	3.88	1.53	0.11	1.2
	5/7/2014	1.72 J	0.932	0.031 J	0.913
	8/4/2015	4.29	1.95	0.13	1.89
MW-711DD (Filtered)	8/15/2011	2.9 J	1.29	0.11 U	0.55
	10/23/2012	1.63	1.41	-0.02 U	0.83
	9/26/2013	1.24	0.462	0.049 U	0.481
	5/7/2014	0.955	0.216 J	0.035 J	0.198
	8/4/2015	4.46	1.73	0.084 J	1.48

MW-712DD	8/18/2011	38.7	13.2	0.59	12.7
	10/22/2012	28.3	9.92	0.59	10.3
	9/24/2013	13.5	4.54	0.286	4.37
	5/6/2014	10.3	3.6	0.206 J	2.99
	8/4/2015	31.4	10.4	0.568	10.4
	9/21/2016	41			
	9/19/2017	28.2			
	9/26/2018	33.8			
	9/25/2019	26.2			
	9/23/2020	36.2			
	10/6/2021	35			
MW-712DD (Filtered)	8/18/2011	38.8	14	0.63	12.4
	10/22/2012	30.8	9.97	0.577	10.2
	9/24/2013	14.2	4.76 J	0.346 J	4.48 J
	5/6/2014	11.1	2.87 J	0.252 J	3.42 J
	8/4/2015	31.7	11.5	0.32	10.8
	9/21/2016	32.1			
	9/19/2017	30.9			
	9/26/2018	32.8			
	9/25/2019	26.6			
	9/23/2020	36.8			
	10/6/2021	34.7			
MW-713D	8/4/2011	5.1 J	2.62	0.061	1.26
	1/31/2012	1 J	0.32	0.1 U	0.23
	5/4/2012	0.33 J	0.081	0.1 U	0.122
	8/4/2012	1 U	0.127	0.1 U	0.093
	10/23/2012	1 U	0.066	0.1 U	0.081
	9/25/2013	0.309	0.056 U	0.03 U	-0.073 U
	5/6/2014	0.168 J	0.082 J	0.052 U	0.153 J
	8/6/2015	0.261 J	0.185	0 U	0.113 J
	9/22/2016	0.052 U			
	9/19/2017	2.24			
	9/25/2018	0.071 J			
	9/25/2019	0.111 J			
MW-713D (Filtered)	9/23/2020	0.277 J			
	10/6/2021	0.169 U			
	8/4/2011	4.7 J	2.67	0.076	1.4
	1/31/2012	0.25 J	0.19	0.1 U	0.071
	5/4/2012	1 U	0.103	0.1 U	0.075
	8/4/2012	1 U	0.133	0.1 U	0.1 U
	10/23/2012	1 U	0.1 U	0.1 U	0.02
	9/25/2013	0.098 J	0.196	-0.009 U	0.107 J
	5/6/2014	0.269 J	0.112 J	0.029 U	0.091 J
	8/6/2015	0.284 J	0.189	0.021 U	0.032 U
	9/22/2016	0.056 U			
	9/19/2017	0.815 J			

Notes:

haded rows identify 2021 data.

anium, Method ASTM D5174 Modified.

opic uranium, Method EML U-02 Modified.

Ci/L: Picocuries per liter

g/L: micrograms per liter

J: Estimated

U: Non-detect

Detachable Activity/Minimum Detectable Concentration)

Table 2 - Groundwater Seep Sample Results 2011-2021
Former Guterl Specialty Steel Corporation

Location ID	Sample Date	Total Uranium (µg/L)	Uranium-234 (pCi/L)	Uranium-235 (pCi/L)	Uranium-238 (pCi/L)
Seep-1108-01	8/8/2011	44.9 J	13.2	0.72	13.2
Seep-1108-01 (Filtered)	8/8/2011	44.3 J	15.4	0.67	15.3
Seep-1108-02	8/8/2011	6.3 J	2.09	0.028 U	1.59
Seep-1108-02 (Filtered)	8/8/2011	6.2 J	1.89	0.088	2.13
Seep-1112-01	12/8/2011	5.85			
Seep-1112-02	12/8/2011	3.47			
Seep-1112-03	12/8/2011	24.8			
Seep-1112-04	12/8/2011	25.9			
Seep-1112-05	12/8/2011	24.9			
Seep-1112-06	12/8/2011	23.2			
Seep-1205-01	5/7/2012	5.3	1.88	0.084	1.99
Seep-1205-01 (Filtered)	5/7/2012	5.3	1.9	0.171	2.04
Seep-1205-02	5/7/2012	5.8	2.34	0.048	2
Seep-1205-02 (Filtered)	5/7/2012	5.9	2.56	0.22	2.28
Seep-1205-03	5/7/2012	20.7	7.3	0.36	7.25
Seep-1205-03 (Filtered)	5/7/2012	20.8	6.88	0.37	7.44
SEEP-1210-1	10/25/2012	35.4	10.6	0.547	10.7
SEEP-1210-1 (Filtered)	10/25/2012	33	11.1	0.66	12.5
SEEP-1210-2	10/25/2012	0.895	0.272	0.027 U	0.198
SEEP-1210-2 (Filtered)	10/25/2012	0.913	0.161	-0.046 U	0.38
SEEP-1210-3	10/25/2012	36.2	12.3	0.571	12.3
SEEP-1210-3 (Filtered)	10/25/2012	36.8	11.7	0.75	13
Seep-0913-1	9/23/2013	24.4	7.66	0.249	8.25
Seep-0913-1 (Filtered)	9/23/2013	23.6	8.42	0.487	7.96
Seep-0913-2	9/23/2013	26.3	9.12	0.423	8.21
Seep-0913-2 (Filtered)	9/23/2013	25.7	8.23	0.468	8.52
Seep-0514-1	5/5/2014	6.01	2.13	0.056 J	1.88
Seep-0514-1 (Filtered)	5/5/2014	5.97	2.47	0.181	2.12
Seep-0514-2	5/5/2014	17.7	5.93	0.298	5.24
Seep-0514-2 (Filtered)	5/5/2014	17.9	5.38	0.411	5.57
Seep-0815-1	8/6/2015	38.2	12.7	0.749	13.7
Seep-0815-1 (Filtered)	8/6/2015	37.6	12.5	0.868	13.3
Seep-0917-1	9/19/2017	30.9			
Seep-0917-1 (Filtered)	9/19/2017	33			
Seep-0917-2	9/19/2017	6.89			
Seep-0917-2 (Filtered)	9/19/2017	7.05			
Seep-0918-1	9/25/2018	4.31			
Seep-0918-1 (Filtered)	9/25/2018	3.6			

Seep-0918-2	9/25/2018	39.3			
Seep-0918-2 (Filtered)	9/25/2018	39.9			
Seep-0919-1	9/24/2019	6.07			
Seep-0919-1 (Filtered)	9/24/2019	5.99			
Seep-0919-2	9/24/2019	34.3			
Seep-0919-2 (Filtered)	9/24/2019	34.9			
Seep-0920-1	9/22/2020	45.7			
Seep-0920-1 (Filtered)	9/22/2020	47.1 J			
Seep-0920-2	9/22/2020	6.26			
Seep-0920-2 (Filtered)	9/22/2020	6.78			
Seep-0921-1	10/7/2021	31.1			
Seep-0921-1 (Filtered)	10/7/2021	31.4			
Seep-0921-2	10/7/2021	9.55			
Seep-0921-2 (Filtered)	10/7/2021	8.9			

Notes:

- There were no seep samples taken in 2016.
- Analysis for uranium, Method ASTM D5174 Modified.
- Analysis for isotopic uranium, Method EML U-02 Modified.

pCi/L: Picocuries per liter

µg/L: micrograms per liter

J: Estimated

U: Non-detect (results are below the Minimum Detectable Activity/Minimum Detectable Concentration).

Table 3 - Erie Canal Surface Water Sample Results 2012-2021
Former Guterl Specialty Steel Corporation

Location ID	Sample Date	Total Uranium ($\mu\text{g}/\text{L}$)	Uranium-234 (pCi/L)	Uranium-235 (pCi/L)	Uranium-238 (pCi/L)
SW-1	1/25/2012	0.609	0.174	-0.028 U	0.234
SW-1 (Filtered)	1/25/2012	0.587	0.241	0.034 J	0.174
Surface Water #	5/7/2012	0.52	0.31	0.1 U	0.217
Surface Water # (Filtered)	5/7/2012	0.51	0.184	0.1 U	0.171
SURFACE-1210-1	10/25/2012	0.599	0.358 J	0.117	0.316
SURFACE-1210-1 (Filtered)	10/25/2012	0.595	0.24 J	0 U	0.088
Surface-0913	09/23/13	0.502	0.106 J	0 U	0.034 U
Surface-0913 (Filtered)	09/23/13	0.368 J	0.164 J	0.03 J	0.058 U
Surface-0514	05/05/14	0.546	0.097 J	0.055 J	0.06 U
Surface-0514 (Filtered)	5/5/2014	0.562	0.096 U	0.027 U	0.112 J
Surface-0815	8/6/2015	0.534	0.216 J	0.049 J	0.194
Surface-0815 (Filtered)	8/6/2015	0.535	0.273	0.017 U	0.147 J
Surface-0917	9/19/2017	0.483 J			
Surface-0917 (Filtered)	9/19/2017	0.978			
Surface-0918	9/25/2018	0.497 J			
Surface-0918 (Filtered)	9/25/2018	0.455 J			
Surface-0919	9/24/2019	0.555			
Surface-0919 (Filtered)	9/24/2019	0.528			
Surface-0920	9/22/2020	0.451			
Surface-0920 (Filtered)	9/22/2020	0.403			
Surface-0921	10/7/2021	0.459 J			
Surface-0921 (Filtered)	10/7/2021	0.379 J			

Notes:

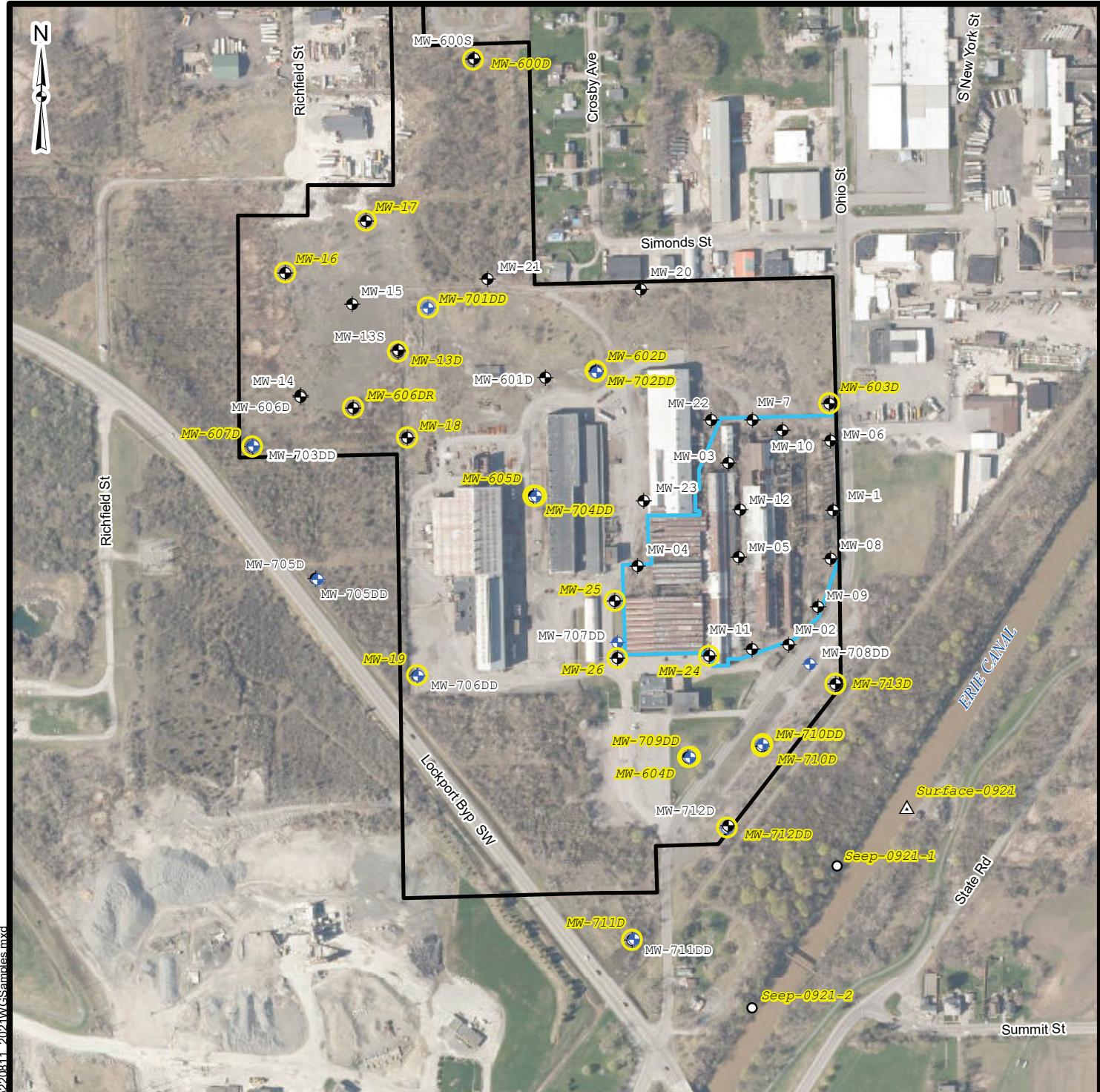
- There were no surface water samples taken in 2016.
- Analysis for total uranium, Method ASTM D5174 Modified.
- Analysis for isotopic uranium, Method EML U-02 Modified.
- The U.S. EPA Maximum Contaminant Level (MCL) for total uranium in drinking water is 30 $\mu\text{g}/\text{L}$.

pCi/L: Picocuries per liter

$\mu\text{g}/\text{L}$: micrograms per liter

J: Estimated

U: Non-detect (results are below the Minimum Detectable Activity/Minimum Detectable Concentration)



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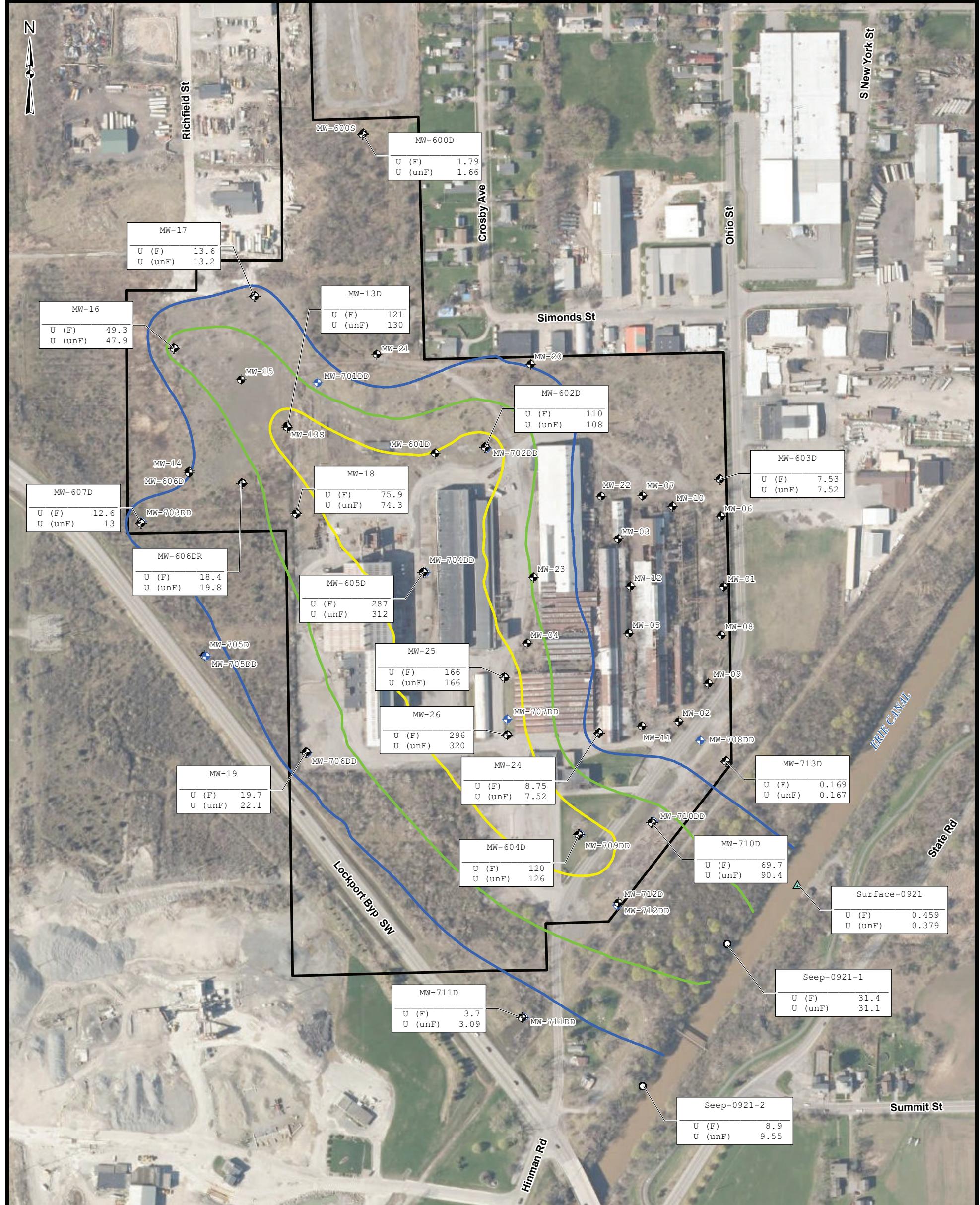
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

2021 GROUNDWATER SAMPLING LOCATIONS

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GUTERL SPECIALTY STEEL CORPORATION
LOCKPORT, NEW YORK

FIGURE 1

**Legend**

- Deep Monitoring Well
- Shallow Monitoring Well
- Seep Sample Location
- Surface Water Sample Location
- Site Boundary
- Extent of Groundwater Above 10 µg/l
- Extent of Groundwater Above 30 µg/l
- Extent of Groundwater Above 90 µg/l

Notes:

U (F) - Total Uranium Filtered
U (unF) - Total Uranium Unfiltered

All concentrations reported in µg/l.
µg/l - Micrograms per Liter.
ND - Not Detected

Location
MW-25
U (unF), 166
Radionuclide
Activity

0 150 300 600
Feet



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY
Buffalo District

**TOTAL URANIUM IN SHALLOW GROUNDWATER
(OCTOBER 2021)**

